

Proposal for Trail Count Data Collection

Front Country Trail Management Recommendations include the recommendation for trail user surveys, a broad category that includes several different types of information collection. This proposal for a trail count will provide simple baseline information on the number of users and the type of use. Other user surveys may be recommended in the future for the purpose of collecting information about patterns of use, attitudes and conflict.

Need:

Trail count information will assist in the development of long-term management strategies, help prioritize trail maintenance, inform outreach and education efforts, and provide information for the development of trail guidelines. Trail count data provides valuable information on the scope of a project when applying for grants and can make a proposal more competitive. Trail count data is being collected nationwide through programs such as the National Bicycle & Pedestrian Documentation Project, co-sponsored by and Alta Planning and Design and the Institute of Transportation Engineers (ITE) Pedestrian and Bicycle Council. This project is working to create a national picture of the importance of trails to our communities.

Methodology:

The two primary methods of obtaining trail count information are manual counts and automatic counts.

Manual Count: With a manual count, two staff or volunteers are positioned at each trailhead and they mark each user in the appropriate trail user category on a form. If users are willing, this count can be combined with a short questionnaire to obtain additional user information.

A two-hour survey at peak use times will yield data that can be extrapolated according to a set formula to represent over all use. The data should be collected on a weekday and a weekend day during a time of year that does not have extreme weather conditions. Tuesdays, Wednesdays and Thursdays are not statistically significantly different, so any of those days will work. Data entered manually on forms is then entered into a spreadsheet for analysis.

Manual counts have been widely used for a long time, as they require no upfront costs and are not technology dependent. The City of San Jose has participated in the Documentation Project with manual surveys and been very pleased with their results. If conducted by volunteers, staff time is limited to volunteer training, spot checks and data entry.

Due to the potential for subjective data collection, volunteer counts may not be credible to all user groups, making the use of staff counters advisable. Other challenges include

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determining peak time for recreational trails and collecting the data on all seven trails in a consistent manner. In San Jose, the goal was to measure bicycle commuter traffic, so peak hours and survey points were more easily determined and no conflict was involved with volunteer use.

Automatic Count. An automatic count uses a device, such as an infrared counter (\$1200), or camera (\$100-\$200), to record users. Data from these methods is collected around the clock and stored digitally. An infrared counter collects accurate data on the number of users, but it is not well equipped to determine the different types of users.

Use of a digital trail camera is most feasible since it clearly distinguishes between user groups, provides an objective, verifiable record and is the least expensive of these options. The cost of a camera is about \$100, runs on 6 D cell batteries, which can last up to 60 days. Up to 4GB of memory can be added with a removable SD card (\$10), which would allow for over 1,000 photos at a 5 megapixel setting. The SD card would be collected each week and replaced with a fresh one so that the images can be downloaded and counted. Six SD cards would be needed for three so that the cameras are always operational.

Operation:

Placement. Cameras would be placed in inconspicuous spots at the beginning, middle and end of a trail. While trail cameras come in a weatherproof casing, it is a good idea to build a black box type holder for additional security. Cameras are set to snap a digital picture when triggered by the motion and heat of a passing object. Cameras are set high enough to avoid capturing most small animal images and angled up or down the trail for best results.

Schedule. The cameras would be moved to different trails on a schedule that is confidential to the staff involved. The cameras would be rotated every two weeks among each of the seven trails, covering all trails in a little over two months. An initial survey from July to early September will yield initial data on each trail. However, the numbers may be different during milder spring and fall weather, so it is advisable to repeat the survey at least once. The batteries can be changed during the rotation to avoid extra maintenance.

Data Collection. The images captured by the cameras are stored on an SD card that is removed from the camera, downloaded to a computer and reviewed. The type and number of users at each location are recorded on a computer spreadsheet. The images themselves are never published, though they may be kept for up to a year in case the results are challenged. The cameras stamp the date and time on each photo, allowing for more detailed analysis of use patterns.

Examples: Several people at the CA State Trails and Greenways Conference mentioned that they have used game cameras for trail counts, including the Forest Trails Alliance. foresttrailsalliance.org. While Alta Planning recommends infrared

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counters, Jennifer Donlon of Alta indicated that several organizations that participate in their nonprofit National Bicycle & Pedestrian Documentation Project, <http://bikepeddocumentation.org>, use game cameras, though Alta does not track this information.

Estimated Budget:

Item	Quantity	Per Unit Cost	Total
Camera	3	\$150	\$450
SD cards 4GB	6	\$10	\$60
Batteries	18 per month	\$18	\$18
Total			\$538

There are special supplies funds in the Challenge Cost Share Agreement that will cover the direct costs for the project.